

15¢

\$5.50 A YEAR

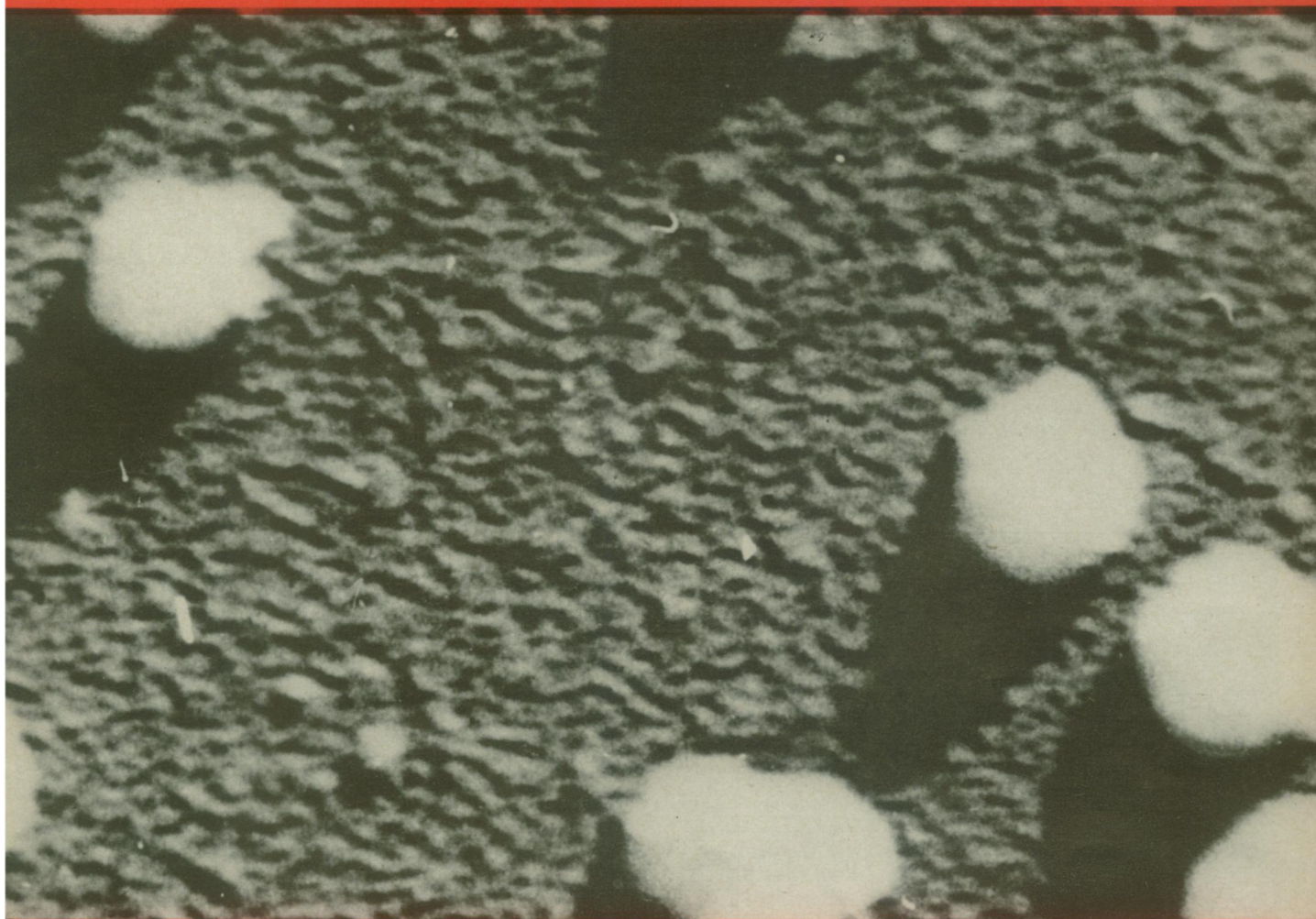
November 2, 1957

VOL. 72, NO. 18 PAGES 273-288

SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Puffs of Flu

See Page 279

A SCIENCE SERVICE PUBLICATION

IS THERE A GIFTED CHILD IN YOUR HOUSE?

If there is, he or she is apt to be interested in many of the items on this page. But if you want even more information about interesting books, equipment, or toys suitable for gifted children be sure to get the Christmas Issue of the Gifted Child Magazine, the only publication in the United States devoted just to the special problems of tomorrow's leaders.

Each issue includes original reports, summaries of important research, reviews of books, and special articles for parents and teachers.

Join hundreds of new subscribers, including U. S. Department of Health, Education and Welfare, public and private schools throughout the United States. This bi-monthly is only

\$5.00
per year

WATERPROOF STOP WATCHES



These beautiful German addition timers are waterproof, shockproof, and dust protected with unbreakable mainsprings. Measuring time in tenths of a second they are ideal for research, athletic events, or production timing. Extremely light weight they are accurate far beyond their cost giving the value of much more expensive instruments.

A limited quantity available at **\$15.95** postpaid

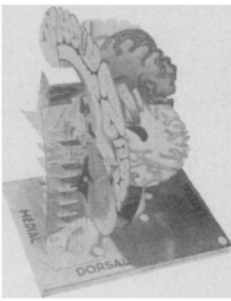
NEED AN EXTRA BRAIN?

With this three dimensional cut out model of the brain you can visualize the brain and get a clear idea of the parts which make it up.

Can you locate the different cortices or the thalamus, or trace the pyramidal tracts, pin point the pituitary or the medulla oblongata?

Would you like to be able to follow articles on experimental brain research more closely and understand the radiating pathways for cortical discharge?

Our NEW 3-D model of the brain helps you do this. Special Price (postpaid) **\$5.98**
BULK RATES FOR SCHOOLS AND COLLEGES or UNIVERSITY BOOK STORES.



WRIST RADIO

Weight: 2.5 Oz.

A broadcast band all-transistor radio has been designed with RF reflex circuit to provide good selectivity and sensitivity. In moderate signal strength areas, no antenna is required up to a distance of 25 miles from a broadcast station of average power. Good consistent reception can be obtained over 35 miles with the use of a wire from 6 inches to 3 feet. The use of transistors makes it a rugged device not subjected to tube breakage. Rugged high quality components are used throughout. Normally the transistor will not have to be replaced for the life of the instrument. Extreme economy of operation is obtained through the use of special circuitry requiring very low current, thus prolonging the life of the mercury cells. The small size makes it the ideal radio. It can be worn on the wrist where it easily fits under the sleeve of a jacket or worn in a shirt pocket.

Complete **\$29.95** postpaid

A 66-INCH SLIDE-RULE FOR YOUR POCKET

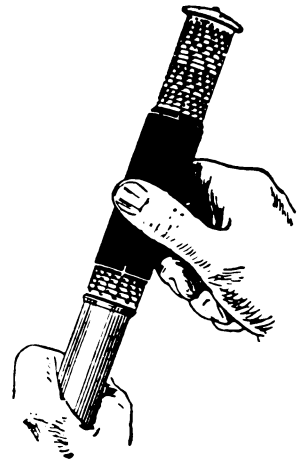
The Calculator carries a 66-inch spiral scale yet measures only ten inches fully extended and six inches when closed. Four- to five-figure accuracy can be relied on. Of non-warping metal construction, with plastic coated scales, it will give years of service.

Model L solves multiplication, division, percentage calculations and gives logarithms.

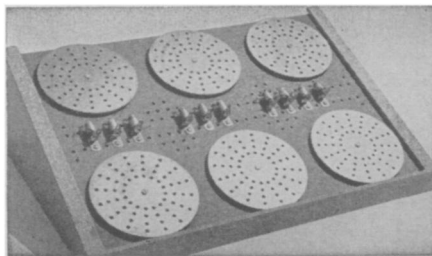
Half an hour's study is ample for its use.

Use this calculator for all your slide rule work and if you are not satisfied after a week repack it and mail it back for full refund.

Price, Model L, shipped postpaid.... **\$19.95**
Add 3% city sales tax in N.Y.C.



FASTER THAN THE SPEED OF THOUGHT!



GENIAC, the first electrical brain construction kit, is equipped to play tic-tac-toe, cipher and encipher codes, convert from binary to decimal, reason in syl-

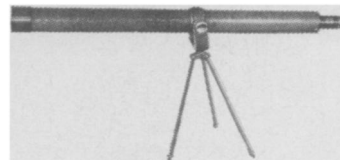
logisms, as well as add, subtract, multiply and divide. Specific problems in a variety of fields—actuarial policy claim settlement, physics, etc., can be set up and solved with the components. Connections are solderless and are completely explained with templates in the manual. This covers 33 circuits and shows how new ones can be designed.

You will find building and using GENIAC a wonderful experience; one kit user wrote us: "This kit has opened up a whole new world of thinking to me." You actually see how computing, problem solving, and game play (Tic-tac-toe, nim, etc.) can be analyzed with Boolean Algebra and the algebraic solutions transformed directly into current diagrams. You create from over 400 specially designed and manufactured components a machine that solves problems faster than you can express them.

SEND for your GENIAC kit now. Only \$19.95 with over four hundred components and parts, fully illustrated manual and wiring diagrams. We guarantee that if you do not want to keep GENIAC after one week you can return it for full refund plus shipping costs.

WATCH THE SATELLITES GO BY

A clear, accurate, stable telescope for planets, stars or ground observation. Complete with Tripod and Case. 20 lbs. 40 power.



Complete **\$19.95** F.O.B., N. Y.

READING RATE ACCELERATOR TEACHES HYPERSPEED READING

... for me meant increasing my reading speed from 600 to 1800 words per minute, enough to finish a novel in half an hour, to triple the number of technical journals and reports I read. Much to my surprise my comprehension went up and studying became easier as I enjoyed reading more.

I went from normal reading speed to hyperspeed reading in thirty hours of intensive reading practice at a leading reading clinic, and immediately thought how wonderful it would be for people who don't have the time or opportunity to take such improvement work to do it at home, for several hours a day.

Ever since then I have gathered materials which are proven, widely used and time-tested in clinics, schools and reading centers but are adaptable to use by adults working at home without supervision. You will immediately increase your reading speed with them if your reading habits are correct but can be accelerated, with practice.

If you have reading difficulties they will be brought out in the diagnostic reading test we include and will analyze with recommendations at no extra cost to you.

The kit includes a reading rate accelerator with cards, two books of practice materials with technical exercises that test reading speed and comprehension, and a booklet on hyperspeed reading.

Price of kit including reading rate accelerator, basic manual, technical reading manual, and discussion of hyperspeed reading plus diagnostic reading test with analysis. **Kit R1 \$24.00** postpaid

Advanced Courses in Computer Operation

DIGITAL COMPUTER COURSE

Shows how to set up and build computers and experiment with pulses, gates, storage, add, subtract, multiply, design circuits. Manuals, wiring diagrams and texts provide a complete introduction to theory and practice.

Course C-1 **\$28.00**

ANALOG COMPUTER COURSE

List sources of materials parts, theory and practical instructions, plus wiring diagrams and schematics for adding, multiplying, integrating and differentiating; gives practice in calculating scale factors, choice of time scales, machine equations and block diagrams.

Course C-2 **\$28.00**

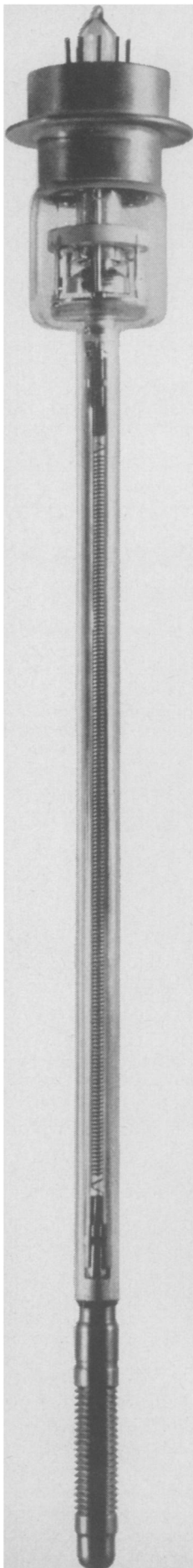
ELECTRONIC MEMORY COURSE

The course contains instructions for building relay memories, magnetic core memories and tube storage memories, with detailed descriptions of methods of storing information and automatically giving instructions to electronic devices. Suitable for all levels—particularly designed for people who have some knowledge of electronics. Including Texts:

Course C-3 **\$28.00**

ALL THREE COURSES TOGETHER \$75.00, SAVING OF \$9.00

Send Check or M. O. to: Dept. SL-117-A, OLIVER GARFIELD CO., INC., 31 Broadway, New Haven, Conn.



A GREAT AMPLIFIER TUBE IS PERFECTED FOR TELEPHONY

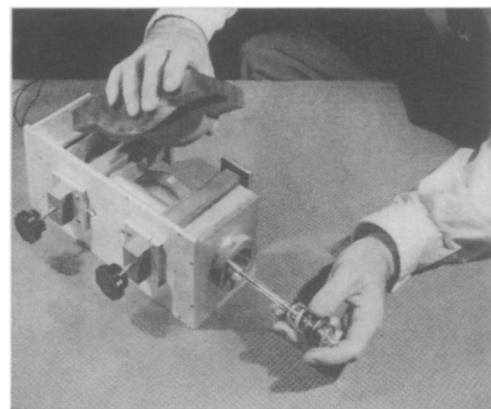
A new transcontinental microwave system capable of carrying four times as much information as any previous microwave system is under development at Bell Laboratories. A master key to this development is a new traveling-wave tube of large frequency bandwidth.

The traveling-wave amplifying principle was discovered in England by Dr. Rudolf Kompfner, who is now at Bell Laboratories; the fundamental theory was largely developed by Labs scientist Dr. John Pierce. Subsequently the tube has been utilized in various ways both here and abroad. At the Laboratories it has been perfected to meet the exacting performance standards of long distance telephony. And now for the first time a traveling-wave tube will go into large-scale production for use in our nation's telephone systems.

The new amplifier's tremendous bandwidth greatly simplifies the practical problem of operating and maintaining microwave communications. For example, in the proposed transcontinental system, as many as 16 different one-way radio channels will be used to transmit a capacity load of more than 11,000 conversations or 12 television programs and 2500 conversations. Formerly it would have been necessary to tune several amplifier tubes to match each channel. In contrast, a single traveling-wave tube can supply all the amplification needed for a channel. Tubes can be interchanged with only very minor adjustments.

The new amplifier is another example of how Bell Laboratories research creates new devices and new systems for telephony.

Left: A traveling-wave tube. *Right:* Tube being placed in position between the permanent magnets which focus the electron beam. The tube supplies uniform and distortionless amplification of FM signals over a 500 Mc band. It will be used to deliver an output of five watts.



BELL TELEPHONE LABORATORIES

WORLD CENTER OF COMMUNICATIONS RESEARCH AND DEVELOPMENT

